

Work Order ID 85320

June-05-12 3:37:41 PM

85320

Page 1

Item ID: D407-667-105TRN

Accept

N900040100

Setup

Start

NS1

Revision ID:

Item Name: Crosstube Turning Detail

Stop

NS2

Start Date: 05/06/2012 Start Qty: 1.00

1

Cust Item ID:

Required Date: 19/06/2012 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals: Process Plan: MLJDate: 12/06/06 Tooling:

Date:

Run

Start

NR1

QC:

Date: SPC (Y/N):

Date:

Stop

NR2

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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Draw Nbr	Revision Nbr
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D407-667-145	Rev C
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100	0.00
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100

MORI SEIKI CNC LATHE LARGE

Mori Seiki

Mori Seiki CNC Lathe Large

Memo 0.00

1-Fill tube with sand & install plugs DT8673 on both ends as per Folio FA249

2-Turn first side as per Folio FA249

3-Blend transition lines only, **do not sand whole tube**

FOLIO REV: AADWG REV: C

*Use mill bastard file, brush file repeatedly with file card.

*Do not use sandpaper coarser than 320 grit.

1 φ KC 12-6-29

110

QC1- Inspect dimensions to dimension sheet

0.00

110

QC

Quality Control

Memo 0.00

1 φ KC 12-6-29

NCR: Yes / No

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order: _____	DISPOSITION	AGAINST DEPARTMENT/PROCESS					
Part No. _____	Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Work Order Update <input type="checkbox"/>	Skid-tube <input type="checkbox"/> Machining <input type="checkbox"/> Thermoforming <input type="checkbox"/> Large Fab <input type="checkbox"/>	Crosstube <input type="checkbox"/> Small Fab <input type="checkbox"/> Finishing <input type="checkbox"/> Composite <input type="checkbox"/>	Prod. Eng. Coor. <input type="checkbox"/> Rec/Store/Packaging <input type="checkbox"/> Supplier <input type="checkbox"/> Other <input type="checkbox"/>	Engineering <input type="checkbox"/> Quality <input type="checkbox"/>		
NCR No. _____							

Root Cause	Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Doc/Data									
Equip/Tooling									
Operator									
Material									
Offset/Setup									
Other									
Process									
Supplier									
Training									
Unauthorized									

FAULT CATEGORY

Landing Gear	Hardware	General	
Bending Passes Below Min	Breaking <input type="checkbox"/>	Burrs <input type="checkbox"/>	Maintenance <input type="checkbox"/>
Centre Not Concentric to O/S	Missing <input type="checkbox"/>	Contamination <input type="checkbox"/>	Set-up <input type="checkbox"/>
Cracks <input type="checkbox"/>	Size/Length <input type="checkbox"/>	Cut Too Short <input type="checkbox"/>	Supplier <input type="checkbox"/>
Crushed/Crimp at Bending	Spinning <input type="checkbox"/>	Documentation/Data <input type="checkbox"/>	Temperature/Cure <input type="checkbox"/>
Inspection Strip in Tube	Threading <input type="checkbox"/>	Finish <input type="checkbox"/>	Weld <input type="checkbox"/>
Other <input type="checkbox"/>	Wrong <input type="checkbox"/>	Inspection Incomplete <input type="checkbox"/>	Wrong Stock Pulled <input type="checkbox"/>
Positioned Wrong <input type="checkbox"/>	Drill Holes	Inspection Unqualified <input type="checkbox"/>	
Ripples on Inner Bend <input type="checkbox"/>	Misaligned <input type="checkbox"/>	Instructions Incomplete/Unclear <input type="checkbox"/>	
Torque Waves in Extrusion <input type="checkbox"/>	Ovalized <input type="checkbox"/>	Jigs/Fixtures/Tooling <input type="checkbox"/>	
Turning Sequence <input type="checkbox"/>	Over/Undersized <input type="checkbox"/>	Kit Incorrect <input type="checkbox"/>	
Wave/Twist in Tube <input type="checkbox"/>	Too Many <input type="checkbox"/>	Kit Missing <input type="checkbox"/>	

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Page 2

Item ID: D407-667-105TRN

Accept

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Setup Start

NS1

Revision ID:

Item Name: Crosstube Turning Detail

Stop

NS2

Start Date: 05/06/2012 Start Qty: 1.00

1

Cust Item ID:

Required Date: 19/06/2012 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals:	Process Plan:	Date:	Tooling:	Date:	Run	Start	*NR1*
						Stop	*NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
120	MORI SEIKI CNC LATHE LARGE	0.00							
120	Memo	0.00							
Mori Seiki	1-Turn second side as per Folio FA249								
Mori Seiki CNC Lathe Large	2-Blend transition lines only, **do not sand whole tube**: *Use mill bastard file, brush file repeatedly with file card. *Do not use sandpaper coarser than 320 grit. FOLIO REV: <u>AA</u> DWG REV: <u>C</u> 3-Remove sand and plugs								
	4-Scribe part # and batch # using vibrating stylus as per Dwg D206-667-145 inside of Cuff(Do not engrave on outside of tube)								

130

QC1- Inspect dimensions to dimension sheet 0.00

130

QC

Quality Control

1 φ KC 12-6-29

NCR: Yes / No

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order: _____	DISPOSITION	AGAINST DEPARTMENT/PROCESS					
Part No. _____	Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Work Order Update <input type="checkbox"/>	Skid-tube <input type="checkbox"/> Machining <input type="checkbox"/> Thermoforming <input type="checkbox"/> Large Fab <input type="checkbox"/>	Crosstube <input type="checkbox"/> Small Fab <input type="checkbox"/> Finishing <input type="checkbox"/> Composite <input type="checkbox"/>	Prod. Eng. Coor. <input type="checkbox"/> Rec/Store/Packaging <input type="checkbox"/> Supplier <input type="checkbox"/> Other <input type="checkbox"/>	Engineering <input type="checkbox"/> Quality <input type="checkbox"/>		
NCR No. _____							

Root Cause	Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Doc/Data									
Equip/Tooling									
Operator									
Material									
Offset/Setup									
Other									
Process									
Supplier									
Training									
Unauthorized									

FAULT CATEGORY

Landing Gear	Hardware	General	
Bending Passes Below Min Centre Not Concentric to O/S Cracks Crushed/Crimp at Bending Inspection Strip in Tube Other Positioned Wrong Ripples on Inner Bend Torque Waves in Extrusion Turning Sequence Wave/Twist in Tube	Breaking <input type="checkbox"/> Missing <input type="checkbox"/> Size/Length <input type="checkbox"/> Spinning <input type="checkbox"/> Threading <input type="checkbox"/> Wrong <input type="checkbox"/>	Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Documentation/Data <input type="checkbox"/> Finish <input type="checkbox"/> Inspection Incomplete <input type="checkbox"/> Inspection Unqualified <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Jigs/Fixtures/Tooling <input type="checkbox"/> Kit Incorrect <input type="checkbox"/> Kit Missing <input type="checkbox"/>	Maintenance <input type="checkbox"/> Mislabelled <input type="checkbox"/> Off-Set <input type="checkbox"/> Orientation Misread <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence <input type="checkbox"/> Outside Dimensions <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Lost <input type="checkbox"/> Part Moved <input type="checkbox"/> Raw Material <input type="checkbox"/>
	Drill Holes		Set-up <input type="checkbox"/> Supplier <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/>
			Other <input type="checkbox"/>

Work Order ID 85320

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85320

Page 3

Item ID: D407-667-105TRN

Accept

Revision ID:

Item Name: Crosstube Turning Detail

Start Date: 05/06/2012 Start Qty: 1.00 ***1***Required Date: 19/06/2012 Req'd Qty: 1.00 ***1***

Reference:

N900040100

Setup

Start

NS1

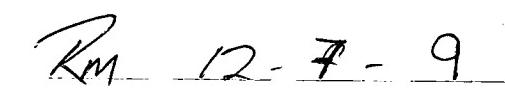
Stop

NS2

Approvals:	Process Plan:	Date:	Tooling:	Date:	Run	Start	*NR1*
	QC:	Date:	SPC (Y/N):	Date:		Stop	*NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
140 *140* QC	QC8- Inspect parts - second check	0.00							

140 *140* QC	Memo	0.00		12-7-5
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145 *145* Crosstubes	Memo	0.00		12-7-9
Crosstubes	GRIND ONLY TRANSITION LINES SMOOTH LONGITUDE WAY.			

150 *150* HandFXtube	Crosstubes Chemical Conversion	0.00		
Hand Finishing Crosstubes	Memo	0.00		

1- Pressure Wash.
12-7-11 *2- Acid Etch* *MO* *12-7-11*

NCR: Yes / No

WORK ORDER NON-CONFORMANCE / UPDATE

DQA: _____ Date: _____

QA Closed: _____ Date: _____

Work Order:	DISPOSITION				AGAINST DEPARTMENT/PROCESS			
Part No. _____	Rework	Skid-tube	Crosstube	Prod. Eng. Coor.	Engineering			
NCR No. _____	Scrap	Machining	Small Fab	Rec/Store/Packaging	Quality			
	Use-as-is	Thermoforming	Finishing	Supplier				
	Work Order Update	Large Fab	Composite	Other				

Root Cause	Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Doc/Data									
Equip/Tooling									
Operator									
Material									
Offset/Setup									
Other									
Process									
Supplier									
Training									
Unauthorized									

FAULT CATEGORY

Landing Gear	Hardware	General	
Bending Passes Below Min	Breaking	Burrs	Maintenance
Centre Not Concentric to O/S	Missing	Contamination	Mislabeled
Cracks	Size/Length	Cut Too Short	Off-Set
Crushed/Crimp at Bending	Spinning	Documentation/Data	Orientation Misread
Inspection Strip in Tube	Threading	Finish	Out of Calibration
Other	Wrong	Inspection Incomplete	Out of Sequence
Positioned Wrong		Inspection Unqualified	Outside Dimensions
Ripples on Inner Bend		Instructions Incomplete/Unclear	Over/Under tolerance
Torque Waves in Extrusion	Drill Holes	Jigs/Fixtures/Tooling	Part Lost
Turning Sequence	Misaligned	Kit Incorrect	Part Moved
Wave/Twist in Tube	Ovalized	Kit Missing	Raw Material
	Over/Undersized		
	Too Many		

Work Order ID 85320

June-05-12 3:37:41 PM

Item ID: D407-667-105TRN

Accept

85320

Revision ID:

Item Name: Crosstube Turning Detail

Start Date: 05/06/2012 **Start Qty:** 1.00 ***1***

Required Date: 19/06/2012 **Req'd Qty:** 1.00 ***1***

Reference:

Approvals: Process Plan:

Date:

Tooling:

Date:

Run Start

NR1

QC:

Date:

SPC (Y/N):

Date:

Stop

NR2

**Sequence ID/
Work Center ID**

160

160

QC

Quality Control

**Operation
Description**

QC7 Inspect Chemical Conversion Coat

**Set Up/
Run Hours**

0.00

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

12-7-11

170

170

Packaging

Packaging

0.00

Memo

0.00

Packaging

Identify and stock in Kanban rackLocation: LG

Mo

12-7-10

180

180

QC

Quality Control

QC21- Final Inspection - Work Order Release

0.00

Memo

0.00

CK 12/7/12

12-07-11

Page 4

NCR: Yes / No

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order:	DISPOSITION			AGAINST DEPARTMENT/PROCESS					
Part No.	Rework	<input type="checkbox"/>	Skid-tube	<input type="checkbox"/>	Crosstube	<input type="checkbox"/>	Prod. Eng. Coor.	<input type="checkbox"/>	Engineering
NCR No.	Scrap	<input type="checkbox"/>	Machining	<input type="checkbox"/>	Small Fab	<input type="checkbox"/>	Rec/Store/Packaging	<input type="checkbox"/>	Quality
	Use-as-is	<input type="checkbox"/>	Thermoforming	<input type="checkbox"/>	Finishing	<input type="checkbox"/>	Supplier	<input type="checkbox"/>	
	Work Order Update	<input type="checkbox"/>	Large Fab	<input type="checkbox"/>	Composite	<input type="checkbox"/>	Other	<input type="checkbox"/>	

Root Cause	Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Doc/Data									
Equip/Tooling									
Operator									
Material									
Offset/Setup									
Other									
Process									
Supplier									
Training									
Unauthorized									

FAULT CATEGORY

Landing Gear	Hardware	General		
Bending Passes Below Min	<input type="checkbox"/> Breaking	<input type="checkbox"/> Burrs	<input type="checkbox"/> Maintenance	<input type="checkbox"/> Set-up
Centre Not Concentric to O/S	<input type="checkbox"/> Missing	<input type="checkbox"/> Contamination	<input type="checkbox"/> Mislabeled	<input type="checkbox"/> Supplier
Cracks	<input type="checkbox"/> Size/Length	<input type="checkbox"/> Cut Too Short	<input type="checkbox"/> Off-Set	<input type="checkbox"/> Temperature/Cure
Crushed/Crimp at Bending	<input type="checkbox"/> Spinning	<input type="checkbox"/> Documentation/Data	<input type="checkbox"/> Orientation Misread	<input type="checkbox"/> Weld
Inspection Strip in Tube	<input type="checkbox"/> Threading	<input type="checkbox"/> Finish	<input type="checkbox"/> Out of Calibration	<input type="checkbox"/> Wrong Stock Pulled
Other	<input type="checkbox"/> Wrong	<input type="checkbox"/> Inspection Incomplete	<input type="checkbox"/> Out of Sequence	<input type="checkbox"/> Other
Positioned Wrong	Drill Holes	<input type="checkbox"/> Inspection Unqualified	<input type="checkbox"/> Outside Dimensions	
Ripples on Inner Bend	<input type="checkbox"/> Misaligned	<input type="checkbox"/> Instructions Incomplete/Unclear	<input type="checkbox"/> Over/Under tolerance	
Torque Waves in Extrusion	<input type="checkbox"/> Ovalized	<input type="checkbox"/> Jigs/Fixtures/Tooling	<input type="checkbox"/> Part Lost	
Turning Sequence	<input type="checkbox"/> Over/Undersized	<input type="checkbox"/> Kit Incorrect	<input type="checkbox"/> Part Moved	
Wave/Twist in Tube	<input type="checkbox"/> Too Many	<input type="checkbox"/> Kit Missing	<input type="checkbox"/> Raw Material	

Picklist Print

June-05-12 3:37:45 PM

Page 1

Work Order ID: 85320

85320
D407-667-105TRN

Parent Item: D407-667-105TRN

Parent Item Name: Crosstube Turning Detail

Start Date: 05/06/2012

Required Date: 19/06/2012

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP Rev:a08.02.28 new issueEC
IPP Rev B 08.04.02 Removed polish EC verified by: DD

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D6010-115		Manufactured	No			110	Each	13.0000	1	1			**

D6010-115

Crosstube Material

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
LG 38343	13 13	<u>1</u>

KC 12-6-28

NCR: Yes / No

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order:	DISPOSITION	AGAINST DEPARTMENT/PROCESS					
Part No.	Rework Scrap Use-as-is Work Order Update	Skid-tube Machining Thermoforming Large Fab	Crosstube Small Fab Finishing Composite	Prod. Eng. Coor. Rec/Store/Packaging Supplier Other	Engineering Quality		
NCR No.							

Root Cause	Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Doc/Data									
Equip/Tooling									
Operator									
Material									
Offset/Setup									
Other									
Process									
Supplier									
Training									
Unauthorized									

FAULT CATEGORY

Landing Gear	Hardware	General		
Bending Passes Below Min	Breaking	Burrs	Maintenance	Set-up
Centre Not Concentric to O/S	Missing	Contamination	Mislabeled	Supplier
Cracks	Size/Length	Cut Too Short	Off-Set	Temperature/Cure
Crushed/Crimp at Bending	Spinning	Documentation/Data	Orientation Misread	Weld
Inspection Strip in Tube	Threading	Finish	Out of Calibration	Wrong Stock Pulled
Other	Wrong	Inspection Incomplete	Out of Sequence	
Positioned Wrong		Inspection Unqualified	Outside Dimensions	
Ripples on Inner Bend		Instructions Incomplete/Unclear	Over/Under tolerance	
Torque Waves in Extrusion		Jigs/Fixtures/Tooling	Part Lost	
Turning Sequence		Kit Incorrect	Part Moved	
Wave/Twist in Tube		Kit Missing	Raw Material	

DART AEROSPACE LTD	Work Order:	85370
Description: Crosstube Assembly	Part Number:	D407-667-145
Inspection Dwg: D407-667-145 Rev: C		Page 1 of 1

FIRST ARTICLE INSPECTION CHECKLIST

Inspection Sheet Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
SIDE A	2.240	+0.005/-0.000	2.245	/	VERN	CNC -08
	1.865	+0.005/-0.000	1.870	/		
	1.878	+0.005/-0.000	1.879	/		
	1.970	+0.005/-0.000	1.975	/		
	2.030	+0.005/-0.000	2.036	/		
	2.165	+0.005/-0.000	2.170	/		
	0.125	+/-0.010	.125	/	VERN	CNC -08
	R0.063	+/-0.010	.063	/	R6	—
	R0.500	+/-0.010	.500	/	R6	—
	R0.063	+/-0.010	.063	/	R6	—
SIDE B	4.438	+/-0.030	4.443	/	VERN	CNC -08
	2.240	+0.005/-0.000	2.239	/	VERN	CNC -08
	1.865	+0.005/-0.000	1.869	/		
	1.878	+0.005/-0.000	1.877	/		
	1.970	+0.005/-0.000	1.975	/		
	2.030	+0.005/-0.000	2.036	/		
	2.165	+0.005/-0.000	2.169	/		
	0.125	+/-0.010	.125	/	VERN	CNC -08
	R0.063	+/-0.010	.063	/	R6	—
	R0.500	+/-0.010	.500	/	R6	—
	R0.063	+/-0.010	.063	/	R6	—
	4.438	+/-0.030	4.440	/	VERN	CNC -08
	113.20	+/-0.020	113.20	/	KJ/TAP	LG-22

Measured by:	KC	Audited by:	DJ	Preliminary Approval:	
Date:	12-6-29	Date:	12-7-5	Date:	

Rev	Date	Change	Revised by	Approved
A	04.04.21	New Issue (P/O D407-667-105)	KJ/RF	
B	06.03.09	Dwg Rev updated	KJ/JLM	
C	09.06.11	Dwg Rev updated	KJ	
D	11.06.21	Tolerance revised for 4.438 dimension	KJ	DK GJ

Item	Qty	Part Number	Description
1	X	D407-667-145	CROSSTUBE ASSEMBLY (407 HIGH FWD)
2	1	D6010-115	CROSSTUBE
3	2	D2873-043	NUT PLATE
4	2	D2873-045	NUT PLATE
5	2	D2891-1	SUPPORT
6	4	D3595-063-395	RUBBER CUSHION
7	4	MS21920-20	CLAMP (OR MS21920-21)
8	14	MS20601AD4W10	RIVET (OR NAS9302B-4-10)
9	A/R	MAGNOBOND 6398	ROCKWELL SPECIFICATION RBO-120-023 ADHESIVE (TEXTRON/BELL SPEC. 299-947-100, TYPE II, CLASS 2 ADHESIVE)

GENERAL NOTES:

- 1) MATERIAL: MANUFACTURED FROM D6010-115
FINISHED LENGTH = 113.20±0.020
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2
PAINT OUTSIDE PER DART QSI 005 4.2
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED.
- 5) BREAK SHARP EDGES: .005 TO 0.010 MAX.
- 6) IDENTIFICATION: SCRIBE DART PART NUMBER "D407-667-145" AND BATCH NUMBER ON
INSIDE OF CUFF USING VIBRATING STYLUS.
- 7) WEIGHT: 17.8 lbs
- 8) PART IS SYMMETRIC ABOUT CENTERLINE.
- 9) RUN CUTTER OFF PART WHERE INDICATED. BLEND OUT EDGE LONGITUDINALLY.
TRANSITION SHOULD BE SMOOTH.
- 10) BEND PROGRESSIVELY WITH A MINIMUM OF 6 PASSES. MAXIMUM TUBE FLATTENING DUE
TO BENDING IS 6% BASED ON O.D.
- 11) LIQUID PENETRANT INSPECT OUTSIDE SURFACE OF CROSSTUBE PER QSI 038.
- 12) INSTALL D2891-1 SUPPORT USING 0.03" TO 0.06" THICK LAYER OF MAGNOBOND 6398 PER
QSI 015. LET CURE FOR 12 HOURS AFTER INSTALLATION AND PRIOR TO PACKAGING.
- 13) INSTALL MS21920-20 CLAMPS (OR -21) WITH D3595-063-395 RUBBER CUSHIONS TO SECURE
THE D2891-1 SUPPORT ON TOP SIDE OF THE CROSSTUBE. ENSURE CLAMP MECHANISMS
ARE LOCATED ON CROSSTUBE SUPPORTS.
- 14) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE
OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS
SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT
LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
- 15) TORQUE CLAMPS 80 TO 100 IN-LB. ENSURE AT LEAST 1.5 THREADS ARE SHOWING IN
SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING.

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT

WITHOUT NOTICE
WORK ORDER

NO. 85320 MLJ
12/06/06

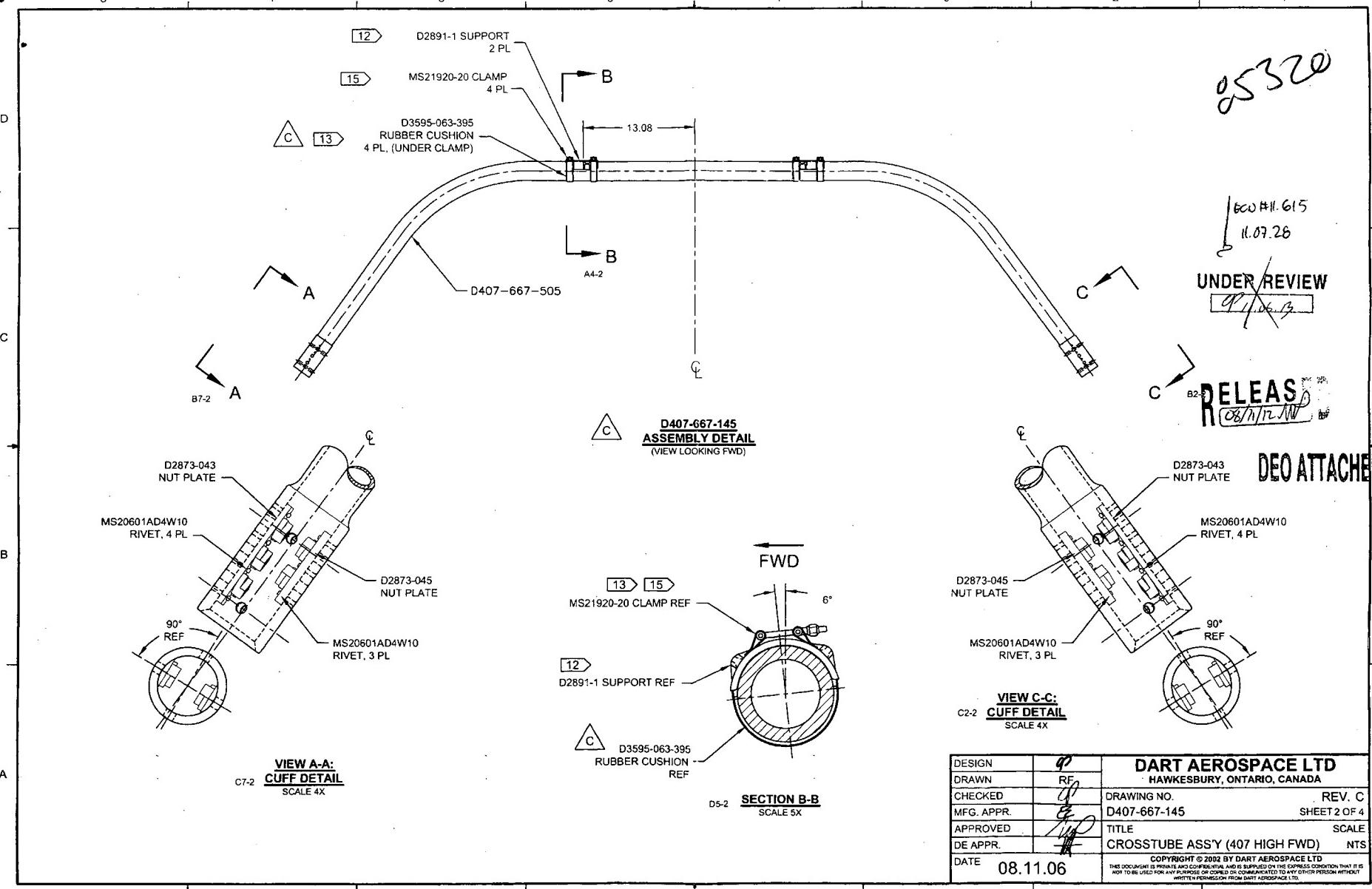
DEO ATTACHED

ECW#K-67
12/07/06

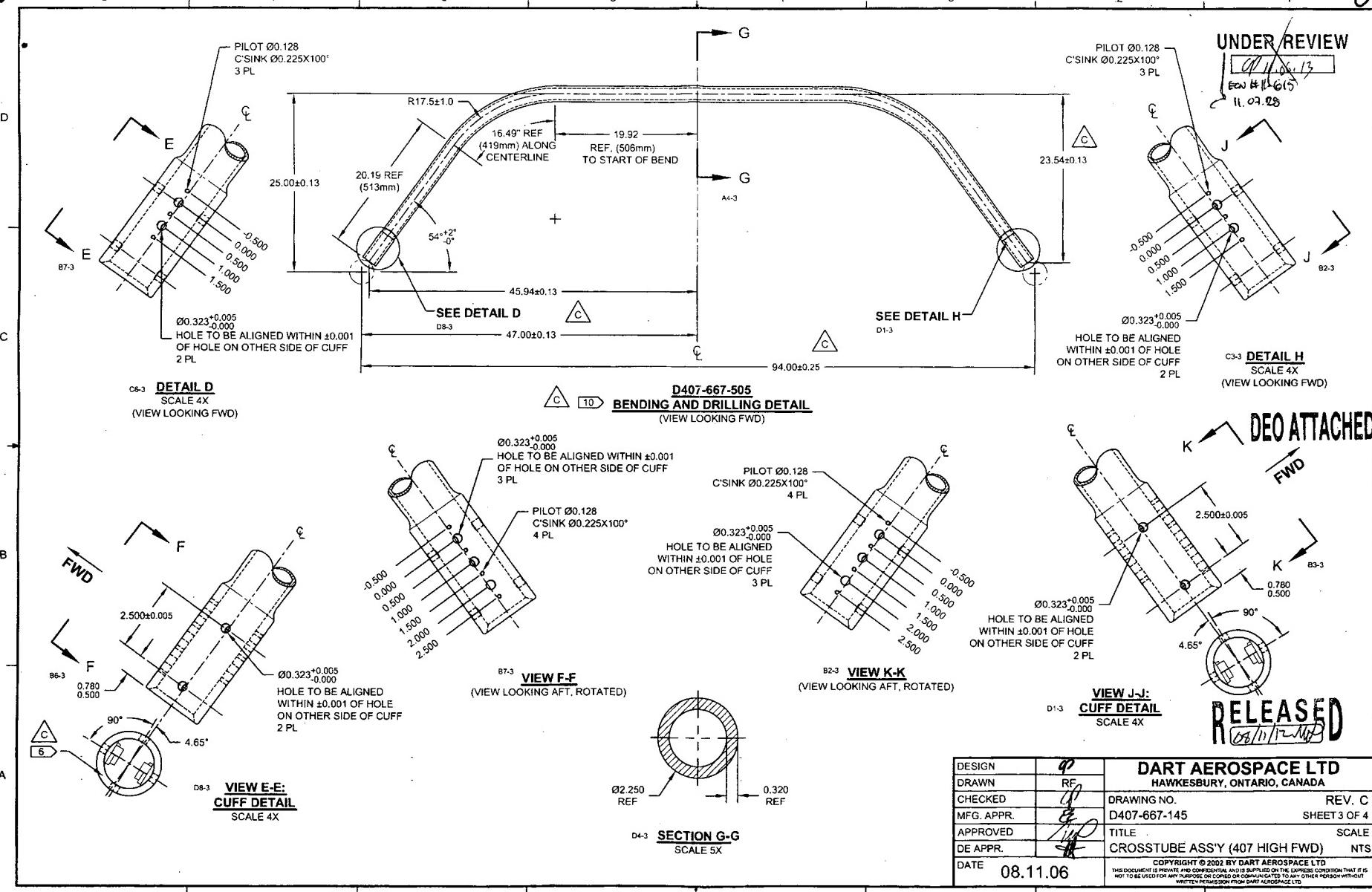
UNDER REVIEW
09/11/06

RELEASED
09/11/06

C	REVISE GENERAL NOTES/PART LIST (ZN D7-1); REORGANIZED VIEWS AND REFORMATTED DRAWING TO CURRENT STANDARDS. D3595-063-395 WAS D2856-400-694 (ZN D6-2 & A5-2); REMOVED REF. 7 ADD TOLERANCES (ZN C6-3, C4-3, D2-3); RELOCATED FLAG #6 (ZN A8-3) PER NCR 210; MOVED TURNING DETAIL & UPDATED TOLERANCE TO SHEET 4.	RF	08.11.06
B	ADD HOLES AND NUT PLATES FOR COMPATABILITY WITH BHT/AA SKUDTUBES	PH	05.07.26
A	NEW ISSUE	CP	02.05.08
REV.	DESCRIPTION	BY	DATE
DESIGN	<i>DP</i>	DART AEROSPACE LTD	
DRAWN	<i>RF</i>	HAWKSLEY, ONTARIO, CANADA	
CHECKED	<i>LP</i>	DRAWING NO.	REV. C
MFG. APPR.	<i>EZ</i>	D407-667-145	SHEET 1 OF 4
APPROVED	<i>LP</i>	TITLE	SCALE
DE APPR.	<i>#</i>	CROSSTUBE ASS'Y (407 HIGH FWD)	NTS
DATE	08.11.06	COPYRIGHT © 2002 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY OTHER PURPOSE OR DISCLOSED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

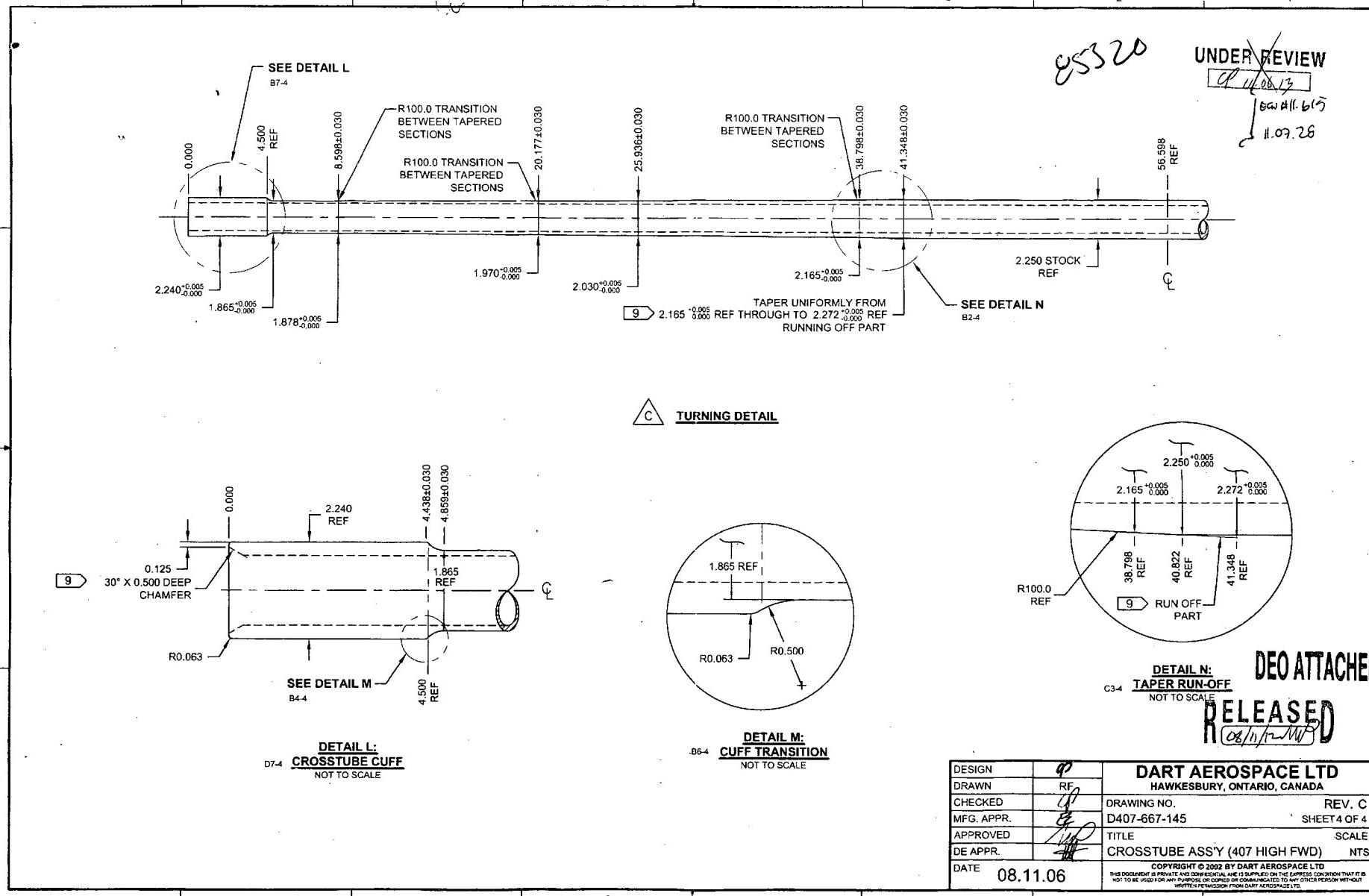


DESIGN	<i>99</i>	DART AEROSPACE LTD	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED	<i>01</i>	DRAWING NO.	REV. C
MFG. APPR.	<i>93</i>	D407-667-145	SHEET 2 OF 4
APPROVED	<i>WJ</i>	TITLE	SCALE
DE APPR.	<i>WJ</i>	CROSSTUBE ASSY (407 HIGH FWD) NTS	
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8532

DESIGN	<i>P</i>	DART AEROSPACE LTD		
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA		
CHECKED	<i>Q</i>	DRAWING NO.	REV. C	
MFG. APPR.	<i>G</i>	D407-667-145	SHEET 3 OF 4	
APPROVED	<i>JW</i>	TITLE	SCALE	
DE APPR.	<i>SH</i>	CROSSTUBE ASSY (407 HIGH FWD) NTS		
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DESIGN	RF	DART AEROSPACE LTD
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA
CHECKED	RF	DRAWING NO. D407-667-145
MFG. APPR.	RF	REV. C
APPROVED	RF	SHEET 4 OF 4
DE APPR.	RF	TITLE CROSSTUBE ASSY (407 HIGH FWD) NTS
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DRAWING NO. D407-667-145	TITLE CROSSTUBE ASS'Y (407 HIGH FWD)	REV. C	DART AEROSPACE LTD ENGINEERING ORDER	D.E.O. NO. D407-667-145-C-1	SHEET NO. SHEET 1 OF 1	SCALE NTS
DRAWN <i>qp</i>	CHECKED <i>ASS</i>	MFG. APPR. <i>JB</i>	APPROVED <i>WD</i>	DE APPR. <i>W</i>		
DATE 11.07.15	DATE 11.07.22	DATE 11.07.22	DATE 11.07.22	DATE 11.07.22	DATE 11.07.21	

PURPOSE:

REPLACE MAGNOBOND WITH PROSEAL.

g32e

CHANGE:

IS:

Item	Qty -145	Part Number	Description
9	A/R	PROSEAL 890 B-2	SEALANT, AMS-S-8802 CLASS B-2

WAS:

9	A/R	MAGNOBOND 6398	ROCKWELL SPECIFICATION RBO-120-023 ADHESIVE (TEXTRON/BELL SPEC. 299-947-100, TYPE II, CLASS 2 ADHESIVE)
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NOTE 12 & 15, SHEET 1 IS AMENDED AS FOLLOWS:

IS:

12) TO INSTALL D2891-1 SUPPORT: ABRADE MATING SURFACE OF SUPPORT AND CROSSTUBE WITH 180-GRIT SANDPAPER AND REMOVE RESIDUE WITH MEK (OR EQUIVALENT). APPLY A 0.04" TO 0.07" THICK LAYER OF PROSEAL 890 CLASS B-2 (OR AMS-S-8802 CLASS B-2) SEALANT TO MATING SURFACE OF SUPPORT.

15) TORQUE CLAMPS 80 TO 100 IN-LB. ENSURE AT LEAST 1.5 THREADS SHOWING IN SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING. PRIOR TO PACKAGING, RE-CHECK TORQUE ON CLAMPS AFTER PROSEAL 890 SEALANT HAS CURED FOR 72 HOURS.

WAS:

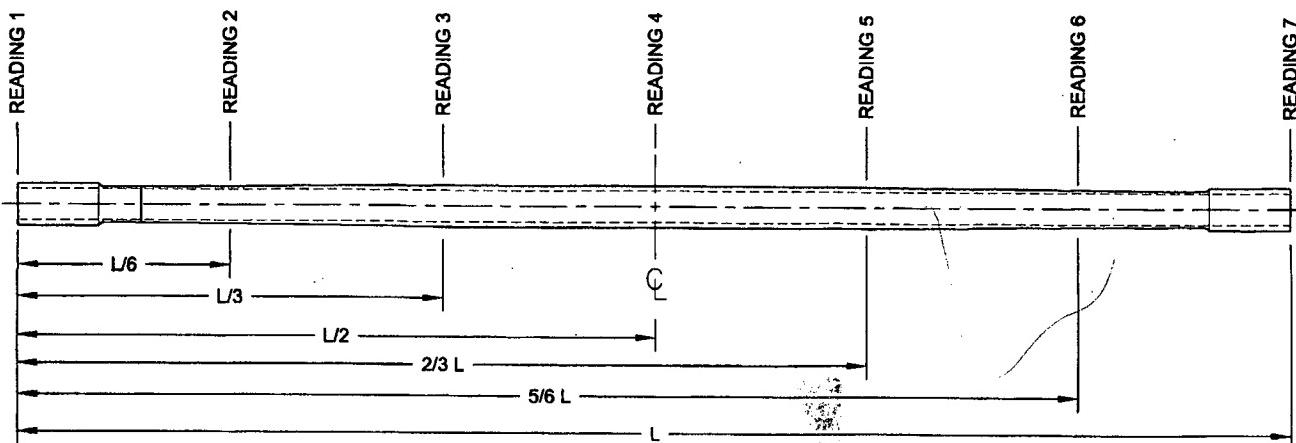
12) INSTALL D2891-1 SUPPORT USING 0.03" TO 0.06" THICK LAYER OF MAGNOBOND 6398 PER QSI 015. LET CURE FOR 12 HOURS AFTER INSTALLATION AND PRIOR TO PACKAGING.

15) TORQUE CLAMPS 80 TO 100 IN-LB. ENSURE AT LEAST 1.5 THREADS SHOWING IN SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING.

*RELEASED
2011-07-28
WD*

DART AEROSPACE LTD	Work Order:
Description: Crosstube Assembly	Part Number: D407-667-145
Inspection Dwg: D407-667-145 Rev: C	Page 2 of 2

WALL THICKNESS MEASUREMENT



Location	WALL THICKNESS MEASUREMENT (IN)				Deviation Δw (max-min)	TOLERANCE
	w1	w2	w3	w4		
READING 1 L= 0"	.326.	.328	.322	.315	.013	
READING 2 L= 18"	.188	.189	.188	.183	.006	
READING 3 L= 37"	.283	.280	.278	.278	.005	
READING 4 L= 56.5	.331	.331	.327	.329	.004	0.042"
READING 5 L= 75	.283	.293	.277	.280	.016	
READING 6 L= 93"	.193	.186	.178	.180	.015	
READING 7 L= 113.20	.330	.325	.319	.316	.014	

Calibration Result

Actual Block Thickness: 100-500

Sitescan 250 Measured Thickness: 100-500

Measured by:	<u>KC</u>	Audited by:	<u>DJ</u>	Preliminary Approval:	
Date:	12-7-04	Date:	12-7-5		Date:

Rev	Date	Change	Revised by	Approved
A	04.04.21	New Issue (P/O D407-667-105)	KJ/RF	
B	06.03.09	Dwg Rev updated	KJ/JLM	
C	09.06.11	Dwg Rev updated	KJ	
D	11.06.21	Tolerance revised for 4.438 dimension	KJ	
E	12.06.04	Wall thickness form added	KJ	<u>M</u>